Amendments to the Claims

This Listing of Claims will replace all prior versions, and listings of claims in the specification:

Listing of Claims:

1. (original) A method to prevent, treat or ameliorate pathological conditions related to abnormal activation of CRE-dependent gene expression or abnormal activation of chemokines comprising administering to a subject in need thereof an effective amount of a CREAP modulator.

2. (original) The method of claim 1 wherein said pathological condition is a neurodegenerative disease.

3. (original) The method of claim 1 wherein said pathological condition is an autoimmune disease.

4. (original) The method of claim 1 wherein said pathological condition is an inflammatory disease.

5. (original) The method of claim 1 wherein said pathological condition is selected from the group consisting of Alzheimer's Disease, Parkinson's disease, Huntington disease, osteoarthritis, psoriasis, asthma, CORD, rheumatoid arthritis, cancer, diabetes, hypertension and chronic pain.

6. (original) The method of claim 1 wherein said CREAP modulator inhibits the activity of any one or more CREAP proteins selected from the group consisting of CREAP1, CREAP2 or CREAP3.

7. (original) The method of claim 6 wherein said CREAP modulator comprises one or more antibodies to a CREAP protein, or fragments thereof, wherein said antibodies or fragments thereof can inhibit the activity of said CREAP protein.

8. (original) The method of claim 6 wherein said modulator comprises one or more peptide mimetics to a CREAP protein wherein said peptide mimic can inhibit the activity of said CREAP protein.

9. (original) The method of claim 1 wherein said CREAP modulator inhibits the expression of any one or more CREAP proteins selected from the group consisting of CREAP1, CREAP2 or CREAP3.

10. (original) The method of claim 9 wherein said CREAP modulator comprises any one or more substances selected from the group consisting of antisense oligonucleotides, triple helix DNA, ribozymes, RNA aptamers and double or single stranded RNA wherein said substances are designed to inhibit the expression of a CREAP protein.

11. (original) A method to prevent, treat or ameliorate pathological conditions related to abnormal activation of CRE-dependent gene expression or abnormal activation of chemokines comprising administering to a subject in need thereof a pharmaceutical composition comprising an effective amount of a CREAP modulator.

12. (original) The method of claim 11 wherein said pathological condition is a neurodegenerative disease.

13. (original) The method of claim 11 wherein said pathological condition is an autoimmune disease.

14. (original) The method of claim 11 wherein said pathological condition is an inflammatory disease.

15. (original) The method of claim 11 wherein said pathological condition is selected from the group consisting of Alzheimer's Disease, Parkinson's disease, Huntington disease, osteoarthritis, psoriasis, asthma, COPD, rheumatoid arthritis, cancer, diabetes, hypertension and chronic pain.

16. (original) The method of claim 11 wherein said CREAP modulator inhibits the activity of any one or more CREAP proteins selected from the group consisting of CREAP1, CREAP2 or CREAP3.

17. (original) The method of claim 11 wherein said CREAP modulator comprises one or more antibodies to a CREAP protein, or fragments thereof, wherein said antibodies or fragments thereof can inhibit the activity of said CREAP protein.

18. (original) The method of claim 11 wherein said CREAP modulator comprises one or more peptide mimetics to a CREAP protein wherein said peptide mimic can inhibit the activity of said CREAP protein.

19. (original) The method of claim 11 wherein said CREAP modulator inhibits the expression of any one or more CREAP proteins selected from the group consisting of CREAP1, CREAP2 or CREAP3.

20. (original) The method of claim 19 wherein said CREAP modulator comprises any one or more substances selected from the group consisting of antisense oligonucleotides, triple

helix DNA, ribozymes, RNA aptamers and double or single stranded RNA wherein said substances are designed to inhibit the expression of a CREAP protein.

21. (original) A method to identify modulators useful to prevent, treat or ameliorate pathological conditions related to abnormal activation of CRE-dependent gene expression or abnormal chemokine activation comprising assaying for the ability of a candidate modulator to inhibit the activity of a CREAP protein.

22. (original) The method of claim 21 wherein said CREAP protein is selected from the group consisting of CREAP1, CREAP2 or CREAP3.

23. (original) The method of claim 21 wherein said method further comprises assaying for the ability of an identified CREAP inhibitory modulator to reverse the pathological effects observed in in vitro, ex vivo or in vivo models of said pathological conditions and/or in clinical studies with subjects with said pathological conditions.

24. (original) The method of claim 21 wherein said pathological condition is a neurodegenerative disease.

25. (original) The method of claim 21 wherein said pathological condition is an autoimmune disease.

26. (original) The method of claim 21 wherein said pathological condition is an inflammatory disease.

27. (original) The method of claim 21 wherein said pathological condition is selected from the group consisting of Alzheimer's Disease, Parkinson's disease, Huntington disease, osteoarthritis, psoriasis, asthma, COPD, rheumatoid arthritis, cancer, diabetes, hypertension and chronic pain.

28. (original) A method to identify modulators useful to prevent, treat or ameliorate pathological conditions related to abnormal activation of CRE-dependent gene expression or abnormal chemokine activation comprising assaying for the ability of a candidate modulator to inhibit the expression of a CREAP protein.

29. (original) The method of claim 28 wherein said CREAP protein is selected from the group consisting of CREAP1, CREAP2 or CREAP3.

30. (original) The method of claim 28 wherein said method further comprises assaying for the ability of an identified CREAP inhibitory modulator to reverse the pathological effects observed in in vitro, ex vivo or in vivo models of said pathological conditions and/or in clinical studies with subjects with said pathological conditions.

31. (original) The method of claim 28 wherein said pathological condition is a neurodegenerative disease.

32. (original) The method of claim 28 wherein said pathological condition is an autoimmune disease.

33. (original) The method of claim 28 wherein said pathological condition is an inflammatory disease.

34. (original) The method of claim 28 wherein said pathological condition is selected from the group consisting of Alzheimer's Disease, Parkinson's Disease, Huntington Disease, osteoarthritis, psoriasis, asthma, CORD, rheumatoid arthritis, cancer, diabetes, hypertension and chronic pain.

35. (original) A pharmaceutical composition comprising one or more CREAP modulators in an amount effective to prevent, treat or ameliorate a pathological condition related to abnormal activation of CRE-dependent gene expression or abnormal chemokine activation in a subject in need thereof.

36. (original) The pharmaceutical composition according to claim 35 wherein said pathological condition is a neurodegenerative disease.

37. (original) The pharmaceutical composition according to claim 35 wherein said pathological condition is an autoimmune disease.

38. (original) The pharmaceutical composition according to claim 35 wherein said pathological condition is an inflammatory disease.

39. (original) The pharmaceutical composition according to claim 35 wherein said pathological condition is selected from the group consisting of Alzheimer's Disease, Parkinson's disease, Huntington disease, osteoarthritis, psoriasis, asthma, COPD, rheumatoid arthritis, cancer, diabetes, hypertension and chronic pain.

40. (original) The pharmaceutical composition according to claim 35 wherein said CREAP modulator inhibits the activity of any one or more CREAP proteins selected from the group consisting of CREAP1, CREAP2 or CREAP3.

41. (original) The pharmaceutical composition of claim 40 wherein said CREAP modulator comprises one or more antibodies to a CREAP protein, or fragments thereof, wherein said antibodies or fragments thereof can inhibit the activity of said CREAP protein.

42. (original) The pharmaceutical composition of claim 40 wherein said CREAP modulator comprises one or more peptide mimetics to a CREAP protein wherein said peptide mimic can inhibit the activity of said CREAP protein.

43. (original) The pharmaceutical composition according to claim 35 wherein said CREAP modulator inhibits the expression of any one or more CREAP proteins selected from the group consisting of CREAP1, CREAP2 or CREAP3.

44. (original) The pharmaceutical composition of claim 43 wherein said CREAP modulator comprises any one or more substances selected from the group consisting of antisense oligonucleotides, triple helix DNA, ribozymes, RNA aptamer and double or single stranded RNA wherein said substances are designed to inhibit CREAP gene expression.

45. (original) A method to diagnose subjects suffering from pathological conditions related to abnormal activation of CRE-dependent gene expression or abnormal chemokine activation and who nary be suitable candidates for treatment with CREAP modulators comprising assaying mRNA levels of a CREAP protein in a biological sample from said subject wherein a subject with increased mRNA levels compared to controls would be a suitable candidate for CREAP modulator treatment.

46. (original) The method of claim 45 wherein said CREAP protein is selected from the group consisting of CREAP1, CREAP2 or CREAP3.

47. (original) A method to diagnose subjects suffering from pathological conditions related to abnormal activation of CRE-dependent gene expression or abnormal activation of chemokines who may be suitable candidates for treatment with CREAP modulators comprising detecting levels of CREAP protein in a biological sample from said subject wherein subjects with increased levels compared to controls would be suitable candidates for CREAP modulator treatment.

48. (original) The method of claim 47 wherein said CREAP protein is selected from the group consisting of CREAP1, CREAP2 or CREAP3.

49. (original) A method to prevent, treat or ameliorate pathological conditions related to abnormal activation of CRE-dependent gene expression or abnormal activation of chemokines comprising:

(a) assaying for CREAP mRNA and/or protein levels in a subject; and,
(b) administering to a subject with increased levels of CREAP mRNA and/or protein levels compared to controls a CREAP modulator in an amount sufficient to prevent, treat or ameliorate said pathological conditions

50. (original) The method of claim 49 wherein said pathological condition is a neurodegenerative disease.

51. (original) The method of claim 49 wherein said pathological condition is an autoimmune disease.

52. (original) The method of claim 49 wherein said pathological condition is an inflammatory disease.

53. (original) The method of claim 49 wherein said pathological condition is selected from the group consisting of Alzheimer's Disease, Parkinson's disease, Huntington disease, osteoarthritis, psoriasis, asthma, COPD, rheumatoid arthritis, cancer, diabetes, hypertension and chronic pain.

54. (original) A diagnostic kit for detecting mRNA levels and/or protein levels of a CREAP protein in a biological sample, said kit comprising:

(a) a polynucleotide of CREAP or a fragment thereof;
(b) a nucleotide sequence complementary to that of (a);
(c) a CREAP polypeptide, or a fragment thereof;
(d) an antibody to a CREAP polypeptide; or
(e) a peptide mimic to a CREAP protein

wherein components (a), (b), (c), (d) or (e) may comprise a substantial component.

55. (original) The method of claim 54 wherein said CREAP protein is selected from the group consisting of CREAP1, CREAP2 or CREAP3.

56. (original) An isolated polypeptide comprising a CREAP amino acid sequence selected from the group consisting of SEQ ID NOs:2,16 and 25.

57. (original) An isolated nucleic acid sequence comprising a nucleic acid sequence that encodes a polypeptide of claim 56.

58. (original) An isolated polypeptide consisting of a CREAP amino acid sequence selected from the group consisting of SEQ ID NOs: 2,16 and 25.

59. (original) An isolated nucleic acid sequence comprising a nucleic acid sequence that encodes a polypeptide of claim 58.

60. (original) An isolated CREAP polypeptide encoded by a CREAP gene of an organism.

61. (original) An isolated DNA comprising a nucleic acid sequence that encodes the CREAP polypeptide of claim 60.

62. (original) A vector molecule comprising a fragment of the isolated nucleic acid according to claim 57.

63. (original) The vector molecule according to claim 62 comprising any one or more transcriptional control sequence.

64. (original) A host cell comprising the vector molecule according to claim 63.

65. (original) An antibody or a fragment thereof which specifically binds to a polypeptide that comprises the amino acid sequence set forth in Claim 56 or to a fragment of said polypeptide.

66. (original) An antibody fragment according to claim 65 which is an Fab or $F(ab')_2$ fragment.

67. (original) An antibody according to claim 65 which is a polyclonal antibody.

68. (original) An antibody according to claim 65 which is a monoclonal antibody.

69. (original) A method for producing a polypeptide as defined in claim 56, comprising culturing a host cell having incorporated therein an expression vector comprising an exogenously-derived polynucleotide encoding a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOs:2,16 and 25 under conditions sufficient for expression of the polypeptide in the host cell, thereby causing the production of the expressed polypeptide.

70. (original) The method according to claim 69, said method further comprises recovering the polypeptide produced by said cell.

71. (original) The method according to claim 69 wherein said exogenously-derived polynucleotide comprises the nucleotide sequence selected from the group consisting of SEQ ID NOs: 1,15 and 24.

72. (original) A method for producing a polypeptide as defined in claim 56, comprising culturing a host cell having incorporated therein an expression vector comprising an exogenously-derived polynucleotide encoding a polypeptide consisting of an amino acid sequence selected from the group consisting of SEQ ID NOs:2, 16 and 25 under conditions sufficient for expression of the polypeptide in the host cell, thereby causing the production of the expressed polypeptide.

73. (original) The method according to claim 72, said method further comprising recovering the polypeptide produced by said cell.

74. (original) The method according to claim 72, wherein said exogenously-derived polynucleotide comprises the nucleotide sequence selected from the group consisting of SEQ ID NOs: 1,15 and 24.

75. (original) A vector molecule comprising a nucleic acid sequence selected from the group consisting of nucleic acid sequences encoding human CREAP protein fragments of amino acid regions 1-267, 289-538, 356-580 and 575-650.